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(54) Title: ENCAPSULATED FOOD PRODUCT FOR USE AS SAUCE BASE (57) Abstract A concentrated food product is provided in the form of an encapsulated suspension of powdered starch in an oil formulation comprising an oil, a mixture of fats, and an emulsifier. The oil formulation may be flavoured for particular applications. The product is used by dissolving it in a hot liquid to make a sauce. This product is manufactured by carefully mixing the oil formulation ingredients in a prescribed manner prior to encapsulation.		

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Encapsulated food product for use as sauce base

This invention relates to food products and particularly to concentrated food products for use as sauce bases and flavourings. The invention seeks to provide such products in an easily dispensable liquid form.

Sauce bases and flavourings are commonly available in powder or dry form, and are diluted either directly or indirectly for use in a culinary dish. In such dry or substantially dry form, these products have a limited shelf life, and give rise to some packaging problems. Particularly, a dry package must be effectively sealed against the ingress of liquid and vapours, and failures in such a seal cannot always easily be detected. For this reason, such packages can be interfered with with relatively little risk of discovery.

The dry or substantially dry products referred to above also have a problem in their final use. During dilution uneven wetting particularly can result in the formulation of lumps, detracting from the appearance of a dish, and deleteriously affecting its quality.

The present invention is directed at a concentrated food product for use as a sauce base, in the form of an encapsulated suspension of powdered starch in a formulation comprising an oil, a mixture of fats and an emulsifier. Such a suspension is stable and has a long storage life so long as it remains out of contact with water. The suspension acts as a liquid, and can thus be packaged in sealed containers to which access can be had only with great difficulty if the container is not to show any sign of interference. The suspension will normally include a thickening agent, and a hydrophillic thickening agent such as xanthan gum is suitable in many such embodiments of the invention. Flours can also be used, but the selection of a thickening agent, if used, will of course depend upon the particular eventual

intended use.

A suspension according to the invention is confined within a flexible capsule or sachet, which can conveniently be made of a soluble comestible material such that when the product is to be used the entire capsule can be added to a dish in which it will disappear. Gelatin-based capsules are particularly suitable in this context as such materials can be substantially tasteless, odourless and colourless.

10 Examples of gelatin based capsules are described in the following Patent Specifications to which reference is directed:

EP -A- 0 233 231 & US -A- 4,804,542

EP-A- 0 199 034

15 EP -A- 0 120 248 & US -A- 4,744,988

US-A- 2 580 863

20 Shell materials of the above type normally comprise Gelatin and a physiologically acceptable plasticiser such as Glycerol, the Gelatin forming a matrix for the plasticiser.

25 A capsule material particularly suitable for confining food products according to this invention is one which comprises gelatin and a plasticiser, the gelatin forming a primary matrix for the plasticiser; and a further component compatible with the gelatin, which component forms a secondary matrix for the plasticiser. A typical such composition includes 18 to 30% by weight of gelatin and 30 to 45% by weight of the plasticiser. The further component is normally a potato starch acetate, another starch derivative, starch itself or mixtures thereof.

30 Normally, the amount of the further component is at least 3% by weight, and does not exceed 25%. A typical maximum is 12% by weight. The preferred further component is unbleached starch acetate, most preferably derived from potato, and a suitable product is available under the Trade Name PERFECTAMYL GEL MB from Avebe BA.

Another suitable potato starch acetate is available from Roquette Freres, under the Trade Name CLEARAM. These materials are described in greater detail in International Patent Application No. GB94/01361 of 23rd June 1994 to which reference is directed.

In products according to the invention, the ratio by weight of the oil formulation to the suspended starch and other agents, if used, is normally in the range 1:4 to 3:1, preferably 1:3 to 2:1, and most preferably 1:2 to 3:2. The oil formulation will normally comprise 65 to 90% by weight of oil (preferably 72 to 90%), and typical quantities therein of the mixture of fats and the emulsifier are 5 to 30% (preferably 5 to 20%), and 0.5 to 12% (preferably 1 to 8%) respectively. A particularly preferred oil formulation comprises 83% vegetable oil; 10% fats mixture; and 7% emulsifier. However, these amounts and particularly that for the emulsifier will vary according to the desired nature of the eventual sauce; the materials to be suspended, and of course any additional flavourings.

The mixture of fats is of particular importance in the oil formulation as it is this component that has a critical effect upon the maintenance of the suspension. A product according to the invention will normally be prepared using fats having different melting points to ensure that the suspended components remain suspended as the initially blended product cools. A typical mixture of fats has a high and a low melting point fat. The high melting point fat can be chosen to solidify in the range 50 to 65°C whereas the low melting point fat solidifies at a lower temperature of say 30 to 40°C. In this way, the product is protected from separation as the standard processing is conducted.

A typical range of weight ratios of high melting point fat to low melting point fat is 1:2 to 1:7, preferably 1:3 to 1:6.5 with a particularly preferred ratio being 1:4. The low melting point fat is the more

important of the fats in the final product as high melting point fats alone would become too hard and brittle hence not protect the suspension in the same manner.

5 A product according to the invention can be prepared by melting two fats together and adding them to a portion of the oil which has been preheated. This is further mixed with the remaining oil, emulsifier and powder ingredients to form the suspension. Milling the
10 mixture to eliminate any powder agglomerates and deaerating the final mixture are preferred additional steps which can assist in obtaining a stable product.

 Suitable flavourings can be added at any stage during the preparation of a product according to the
15 invention and indeed, flavourings may be inherent in one or more of the constituents already referred to. In some embodiments of the invention, the oil formulation can be used alone as a culinary supplement or as a sauce
20 base, merely requiring the addition of a hot liquid such as water or milk. The hot liquid may already be part of a food dish. Once again, flavourings may be added or be inherent in one or more of the constituents. Thus, an encapsulated flavoured oil formulation can be used in
25 place of a conventional stock cube.

 The invention will now be described in the context of the following non-limiting examples:

Example 1

White Sauce Base

		% by weight	mg/cap
	* Soya Bean Oil	32.08	4684
5	* Loders 7	3.00	437
	* Lecithin	2.67	390
	Potato Starch	53.48	7808
	* Yellow Beeswax	0.75	110
-	Xanthan gum	8.02	1171
10		100.00	14600

* = Oil formulation component

Oil formulation = 5621mg Oil : Others = 1 : 1.597
Others = 8979mg

15	<u>Oil Formulation</u>		<u>%</u>
	Oil	= 4684mg	83.33
	Fats	= 547mg	9.73
	Emulsifier	= 390mg	6.94
		5621mg	

20 Fats = High Mpt : Low Mpt = 1 : 3.97

25 The sauce base was made by mixing the fats with a preheated portion of the oil, after which the remaining components were added. The suspension was then delivered to and enclosed in a gelatin-based capsule having the following composition by weight:

30 Gelatin 24; Glycerol 40; Water 20; Potato Starch
Acetate 6; Bleached Potato starch acetate 10.

The sauce proper was made by adding the suspension to 300 mls of cold milk in a pan which was gently heated with simultaneous gentle stirring. The result was a substantially lump free sauce with a grainy white appearance, the grains were rice shaped, less than 1mm long. The consistency was of a thick pouring sauce with a neutral taste and a smooth mouthfeel (grains not detectable).

Example 2
White Sauce Base

5		% by weight	mg/cap
	* Soya Bean Oil	32.11	7000
	* Hydrogenated Soya Bean Oil	0.92	200
	* Loders 7	5.73	1250
	* Lecithin	0.46	100
10	Plain Flour	13.76	3000
	Potato Starch	41.28	9000
	@ Maxavor Gistex C	4.59	1000
	** Fried Onion Flavour	1.15	250
		100.00	21800

15

* = Oil formulation component

** = Flavour as part of oil formulation

@ = Flavour as part of "others"

20

Oil formulation = 8800mg Oil : Others = 1 : 1.477
Others = 13000mg

25

<u>Oil Formulation</u>		<u>%</u>
Oil (Soya Bean + Flavour)	= 7250mg	82.39
Fats	= 1450mg	16.48
Emulsifier	= 100mg	1.14
	8800mg	

30

Fats = High Mpt : Low Mpt = 1 : 6.25

35 The sauce base was made in the same way as that of Example 1, but using only 250mls of milk. The result was a very smooth lump-free pouring sauce. There were no visible grains or particles. The savoury flavour was good, with a smooth and slightly gummy feel in the mouth.

40

Example 3
White Sauce Base

5		% by weight	mg/cap
	* Soya Bean Oil	34.86	7600
	* Hydrogenated Soya Bean Oil	0.92	200
	* Loders 7	5.73	1250
	* Lecithin	0.92	200
10	Potato Starch	27.52	6000
	@ Maxavor Gistex C	4.59	1000
	** Fried Onion Flavour	1.15	250
	Xanthan Gum	5.96	1300
	@ Milk Powder	18.35	4000
15		100.00	21800

* = Oil formulation component

** = Flavour as part of oil formulation

@ = Flavour as part of "others"

20 Oil formulation = 9500mg Oil : Others = 1 : 1.295
Others = 12300mg

25	<u>Oil Formulation</u>	<u>%</u>
	Oil (Soya Bean + Flavour) = 7850mg	82.63
	Fats = 1450mg	15.26
	Emulsifier = 200mg	2.11
	9500mg	

30 Fats = High Mpt : Low Mpt = 1 : 6.25

35 The sauce base was made in the same way as that of
Example 1, but using 300mls of water. The result was a
smooth essentially lump-free thick pouring sauce. A few
loosely bound agglomerates of milk powder were visible.
The taste was similar to that of Example 2, but lacked
the feel of "body" from the milk. A less opaque sauce
40 than either of those of Examples 1 and 2.

Example 4
White Sauce

	% by weight	mg/cap
* Soya Bean Oil	37.53	8410
* Lecithin	1.78	400
Potato Starch	40.16	9000
Plain Flour	13.39	3000
* Hydrogenated Soya Bean Oil	0.54	120
* Loders 7	2.14	480
@ Maxavor Gistex C	4.46	1000
	100.00	22410

* = Oil formulation component

15 @ = Flavour as part of "others"

Oil formulation = 9410mg Oil : Others = 1:1.382

Others = 13000mg

20 Oil Formulation

Oil (Soya Bean + Flavour) = 8410mg 89.37

Fats	= 600mg	6.38
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Emulsifier = 400mg 4.25

9410mg

Fats = High Mpt : Low Mpt = 1:4

30 The sauce base was made in the same way as that of
Example 2, using 250ml milk. This formulation allows
separation of approximately 10% of oil in the capsule.
A higher fat ratio may be preferred for some products.
Produces a smooth lump free pouring sauce as Formulation
35 2. A very small quantity of oil remains as droplets on
the surface of the sauce.

Example 5
Cheese Sauce

		% by weight	mg/cap
5	* Soya Bean Oil	22.56	4740
	* Hydrogenated Soya Bean Oil	0.52	110
	* Loders 7	3.10	650
	Plain Flour	14.29	3000
	Potato Starch	28.57	6000
10	@ Maxavor Gistex C	2.38	500
	@ Cheese Powder P4	14.29	3000
	* Butter Oil	14.29	3000
		100.00	21000

15 * = Oil formulation component

@ = Flavour ingredient as part of "others"

Oil formulation = 8500mg Oil : Others = 1:1.471

Others = 12500mg

20

Oil Formulation

%

Oil (Soya Bean) = 4740mg 55.76

Fats = 760mg 8.9

25

Butter Oil = 3000mg 35.29
8500mg

Fats = High Mpt : Low Mpt = 1:5.91

30

Note Butter oil acts as a combination of oil, low melting point fat and emulsifier. It is not possible to quantify the effect of each action.

35

The sauce base was made in the same way as that of Example 1, using 200ml of milk. The result was a very smooth, lump free, thin pouring sauce. Smooth mouth feel with a dairy type taste including a cheese note. A cheese flavour booster is required to produce a stronger flavour profile, but would readily coat pasta as made here.

40

10

Example 6

Custard (sugar free)

	% by weight	mg/cap
5 * Soya Bean Oil	30.33	6000
* Hydrogenated Soya Bean Oil	2.53	500
* Butter Oil	15.17	3000
Cornflour	50.56	10000
@ Riboflavin	0.10	20
10 @ Aspartame	0.51	100
@ Vanillin	0.05	10
@ 25% Salt Solution	0.76	150
	100.00	19780

15 * = Oil formulation component

@ = Flavour/colour ingredients as part of "others"

Oil formulation = 9500mg Oil : Others = 1 : 1.082

Others = 10280mg

Oil Formulation

%

Oil (Soya Bean) = 6000mg 63.15

Fats	= 500mg	5.26
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$$\text{Butter Oil} = \frac{3000\text{mg}}{9500\text{mg}} \quad 31.58$$

Fats were solely high melting point to aid the set of the low melting point fat of the Butter Oil.

The sauce base was made in the same way as that of Example 1, using only 200mls of milk. The result was a smooth pale yellow sauce with thin pouring sauce consistency. Two very small (less than 2mm) unbroken soft powder agglomerates were visible at the end. Pleasant buttery, vanilla taste with correct sweetness level and a short mouthfeel texture. A few oil droplets remain on the custard surface.

Example 7

Chocolate Sauce (sugar free)

	% by weight	mg/cap
* Soya Bean Oil	24.71	5250
5 * Hydrogenated Soya Bean Oil	2.35	500
* Butter Oil	14.12	3000
Cornflour	42.35	9000
@ Aspartame	0.47	100
@ 25% Salt Solution -	0.71	100
10 @ Chocolate Flavouring	1.18	250
@ Cocoa Powder	14.12	3000
	100.00	21250

* = Oil formulation component

@ = Flavour/ingredient as part of "others"

15 Oil formulation = 8750mg Oil : Others = 1 : 1.429
 others = 12500mg

Oil Formulation%

20 Oil (Soya Bean) = 5250mg 60.00
 Fats = 500mg 5.71
 Butter Oil = 3000mg 34.29
 8750mg

25 Fats are solely high melting point to aid the set of the low melting point fat of the Butter Oil.

The sauce was made in the same way as that of Example 6. The result was a similar smooth textured
 30 thin pouring consistency as with the custard, maybe closer to a coating sauce. Pale brown drinking chocolate colour with brown flecks which dissipate on standing. A very pleasant tasting milk chocolate sauce.

When capsules containing this product were added to
 35 milk just brought to the boil, and stirred off the heat then reboiled, a similar mix resulted. The brown flecks were initially more prominent and a few 2mm agglomerates were seen. All these dissipated on standing indicating they require time rather than stirring to fully
 40 dissolve.

12

Example 8
Garlic & Herb Sauce

		% by weight	mg/cap
5	* Soya Bean Oil	26.59	4600
	* Hydrogenated Soya Bean Oil	2.31	400
	* Loders 7	7.23	1250
	* Lecithin	0.58	100
	Potato Starch	28.90	5000
10	Cornflour	28.90	5000
	@ Chicken Spice	0.29	50
	** Oregano Essence	1.16	200
	@ Garlic Flavour	2.89	500
	** Basil Essence	1.16	200
15		100.00	17300

* = Oil formulation components

** = Flavour as part of oil formulations

@ = Flavour as part of "others"

20 Oil formulation = 6750mg Oil : Others = 1 : 1.56
Others = 10550mg

25	<u>Oil Formulation</u>		<u>%</u>
	Oil (Soya Bean + Flavours)	= 6000mg	74.07
	Fats	= 1650mg	24.4
	Emulsifier	= <u>100mg</u>	1.48
		6750mg	

30 Fats High Mpt : Low Mpt = 1:3.125

35 The sauce was made in the same way as that of Example 6. The result was a very smooth and lump free off white pouring sauce. A smooth slightly gummy mouth feel with a good smell and taste of herbs.

Example 9

Tomato Sauce

5		% by weight	mg/cap
	* Soya Bean Oil	27.86	5850
	* Hydrogenated Soya Bean Oil	1.43	300
	* Loders 7	5.95	1250
	* Lecithin	2.38	500
10	Potato Starch	14.29	3000
	Cornflour	23.81	5000
	@ Aspartame	0.48	100
	@ Tomato Powder	14.29	3000
	@ Tomato Flavouring	4.76	1000
15	** Basil Essence	2.38	500
	@ Citric Acid	2.38	500
		100.00	21000

20 * = Oil formulation components
 ** = Flavour as part of oil formulation
 @ = Flavour/ingredient as part of "others"

Oil formulation = 8400mg Oil : Others = 1 : 1.5
Others = 12600mg

25 Oil Formulation

	Oil (Soya Bean + Flavour)	= 6350mg	75.60
	Fats	= 1550mg	18.45
30	Emulsifier	= <u>500mg</u>	5.95
		8400mg	
	Fats	High Mpt : Low Mpt =	1:4.17

Performance Assessment

35 Used 200ml milk.

The sauce was made in the same way as that of Example 6. A curdling like effect occurred during heating of this sauce which requires a more thorough stirring at the boiling point to fully disperse. A smooth lump free thin pouring sauce still resulted with noticeable flecks from the red tomato powder. A pale pink coloured sauce with a short texture.

Example 10
Butter and cheese

	% by weight	mg/cap
* Butter Oil	32.00	4000
* Sunflower Seed Oil	32.00	4000
Cheese Powder P4	24.00	3000
Edlong 600	12.00	1500
-	100.00-	12500

* = Oil formulation components

Oil formulation	=	8000mg	Oil : Others	=	1 : 1.56
Others	=	4500mg			(1.78:1)
					(3.56:2)

Oil Formulation

Butter Oil acting as Fat, Emulsifier and Oil in
20 undefinable ratios.

Comments

In this formulation no high melting point fats are used which forms a paste which is temperature sensitive. The mix is quite slow to form a stable matrix for powder suspension and heat ($>30^{\circ}\text{C}$) destroys the matrix formed.

Performance Assessment

125gms of dried pasta is boiled in salted water until cooked. The pasta is drained and returned to the pan. Laboratory scale mix in an air filled gelatin-based capsule is added. Stirring the capsule in the hot, wet pasta produces a coated, flavour pasta using the residual water. No lumps of powder are left.

15

Example 11
Chicken Stock

		% by weight	mg/cap
5	* Soya Bean Oil	42.55	1336
	Lecithin	0.51	16
	* Beeswax	3.17	99.6
	* Loders 7	12.69	398.4
	@ Maxavor Rye C	20.54	645
	@ Maxavor Gistex C	20.54	645
10		100	3140

* = Oil formulation components

@ = Flavour ingredient as part of "Others".

	Oil formulation =	1850mg	Oil:Others = 1:0.70 =	1.43:1
15	Others =	1290mg		= 2.86:2

Oil Formulation

20	Oil	=	1336mg	72.2
	Fats	=	498mg	26.9
	Emulsifier	=	<u>16mg</u>	0.9
			1850mg	

Fats High Mpt : Low Mpt = 1:4

Performance Assessment

On adding to 190ml of boiling water, capsule rupture in approximately 5 seconds is achieved, with full dissolution in 30-45 seconds. An oily surfaced chicken stock results which is lump free and can be used in casseroles or other applications normally requiring "stock cubes" which are notoriously difficult to dissolve. A variation using chicken fat to replace the Soya Bean Oil and some of the fats is also possible.

A typical manufacturing process for a product according to the invention, prior to encapsulation, comprises the following steps:

1. Oil and emulsifier weighed and mixed.
- 5 2. Fats weighed and mixed.
3. Gentle heating until all fats melted
4. Cooling to between room temperature and 30°C.
5. Powders weighed and stirred into oil formulation.
6. Liquid flavour ingredients weighed, added and
- 10 stirred in.

In the preparation of a product not all the oil formulation need be heated to melt the fats; only sufficient to ensure the fats did not solidify into an unworkable block within the cold oil when mixed prior to the addition of the elements to be suspended. Once the components are uniformly dispersed within the hot mixture, it is allowed to cool to the stable suspension described above.

20 In the encapsulation process a Silverson mixer is used to help incorporate powders in the suspension which is then mix stirred at high speed, passed through a colloid mill to remove agglomerates, and then subject to deaeration treatment. It is then encapsulated using a rotary die machine in a gelatin composition comprising:

Gelatin	43.4
Glycerol	20.0
Water	36.6

30 The above composition when formed into a capsule can be dissolved in hot water to form a thickened base for a sauce. Other suitable capsule compositions are those described in International Application No. GB94/01361, referred to above. The addition of further components to the formulation such as flavourings and a milk powder similarly suspended by adjusting the oil formulation to powder ratio results in a white sauce.

35 The addition of cocoa powder, sugar and other minor

flavour components results in a chocolate sauce.

These are no more than illustrations of how a sauce base in accordance with the invention might be used.

Apart from the additional supplementing of the
5 composition with flavourings, the relative proportions of the components could well vary with regard to the nature of the end product and the quantities in which it is to be prepared. As noted above, products according to the invention are preferably confined in a comestible
10 capsule, and different sizes of capsule can tolerate different thicknesses or viscosity in the suspension.

Typical suitable components for use in products according to the invention are listed below. the list is not exhaustive, but offered as an indication of the
15 range of components that can be used.

Oils

Soya Bean, Sunflower, Olive, Rape Seed, Safflower, Wheat Germ, Coconut and Fractionated Coconut, Ground Nut, Corn Oil, Sesame Oil.

20

Fats

High melting point ($> 40^{\circ}\text{C}$)

Beeswax, Hydrogenated Soya Bean Oil, other hydrogenated plant oils, animal fats.

25

Low melting point ($< 40^{\circ}\text{C}$)

Loders 7, Cocoa butter, Cocoa butter equivalents, Butter Oil, partially hydrogenated plant oils, Chicken fat.

Emulsifier

30

Phospholipids, Lecithin, Butter Oil etc.

Thickeners

Natural Starches: Potato Corn/maize, Wheat, Rice, Tapioca

35

Modified Starches: Crosslinked, pre-gelatinised, stabilised

Gums: Xanthan, Locust Bean, Guar, Carboxy,

Methyl cellulose, micro crystalline cellulose, Gellan, Soluble Fibres.

Flavours (Liquid or Solid)

- 5 Spices, Herbs, Chicken, Beef, Pork, Lamb, Other meat,
Vanilla, Chocolate, Honey, Lemon, Orange, Other fruit,
Cheese, Other dairy, Tomato, Carrot, Celery, Onion,
Other vegetable
Yeasts, Yeast Extracts, Hydrolysed vegetable proteins,
10 Ribonucleotides, Mono-sodium Glutamate, other
Glutamates, Cheese enhancers.

Sweeteners

- Sugar, Molasses, Sorbitol, Aspartame, Sodium Saccharin,
15 Acesulphame K.

CLAIMS

1. A concentrated food product in the form of a suspension of powdered starch in an oil formulation comprising an oil, a mixture of fats and an emulsifier, the suspension being confined within a flexible comestible capsule.

2. A product according to Claim 1 wherein the capsule material is soluble.

3. A product according to Claim 2 wherein the capsule material comprises gelatin.

4. A product according to Claim 3 wherein the capsule material includes glycerol and a potato starch acetate.

5. A product according to any preceding Claim including a hydrophilic thickening agent in the suspension.

6. A product according to Claim 5 wherein the hydrophilic thickening agent is xanthan gum.

7. A product according to any preceding Claim wherein the ratio by weight of the oil formulation to the powder in the suspension is in the range 1:4 to 3:1.

8. A product according to any preceding Claim wherein the oil formulation comprises 65 to 90% by weight of oil.

9. A product according to Claim 8 wherein the oil formulation includes 5 to 30% by weight of the mixture of fats, and 0.5 to 12% by weight of the emulsifier.

10. A product according to any preceding Claim wherein the mixture of fats in the oil formulation comprises a low melting point fat and a high melting point fat with a ratio by weight in the range 7:1 to 2:1.

11. A product according to any preceding Claim wherein the starch is a potato starch.

12. A product according to any preceding Claim wherein the suspension includes a flavouring ingredient.

13. A method of manufacturing a food product according to any preceding Claim which method comprises: melting the mixture of fats and adding the mixture to a preheated portion of the oil;

5

mixing the fats and preheated oil with the remainder of the oil, the emulsifier and the powdered starch to form the suspension; and

10 — confining the suspension in a flexible comestible capsule.

14. A method according to Claim 13 including the steps of milling and deaerating the suspension prior to encapsulation.

15 15. A method of making a comestible sauce comprising the step of dissolving a product according to any of Claims 1 to 12 in a hot liquid.

16. A method according to Claim 15 wherein the hot liquid is already part of a food dish.

20 17. A method according to Claim 15 or Claim 16 wherein the hot liquid comprises milk.

INTERNATIONAL SEARCH REPORT

Intern. Appl. No.

PCT/GB 94/01824

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 A23L1/0522 A23L1/39 A23L1/226 A23L1/035 A23P1/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A23L A23P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP,A,0 173 646 (BATTELLE MEMORIAL INSTITUTE) 5 March 1986 see Example I ---	1-17
Y	SEIFEN-ÖLE-FETTE-WACHSE vol. 100, no. 12, 20 June 1974, AUGSBURG pages 281 - 294 J.VERONESE 'Mikroverkapselung von Aromen, Riechstoffen, Wirkstoffen und ölen' see page 282 - page 283 ---	1-17
Y	EP,A,0 224 157 (R.P.SCHERER GMBH) 3 June 1987 see Example 3 ---	1-17
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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"&" document member of the same patent family

Date of the actual completion of the international search

11 November 1994

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

Intern. Patent Application No
PCT/GB 94/01824

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>EP,A,0 337 509 (R.P.SCHERER GMBH) 18 October 1989 cited in the application see col.1, 3, 4</p> <p>-----</p>	1-17

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 94/01824

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		WO-A- 8701034	26-02-87
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